### WHAT IS CLAIMED IS:

**CLAIM 1.** A method for producing cranial remodeling devices to correct for cranial shape abnormalities comprising:

capturing a three dimensional digital image of a deformed head to produce first digital data; and

utilizing said first digital data to automatically provide cranial remodeling device information for use in fabricating a cranial remodeling device for said deformed head.

## **CLAIM 2.** A method in accordance with claim 1, wherein:

said cranial remodeling device information comprises identification of one of a plurality of types of cranial remodeling devices.

# **CLAIM 3.** A method in accordance with claim 2, wherein:

said plurality of types of cranial remodeling devices includes devices for treatment of specific types of cranial deformities.

### **CLAIM 4.** A method in accordance with claim 3, wherein:

said specific types of cranial deformities comprise one or more of plagiocephaly, brachycephaly, and scaphocephaly.

### **CLAIM 5.** A method in accordance with claim 3, wherein:

said cranial remodeling device information comprises predetermined configuration features that may be incorporated in said cranial remodeling device.

#### **CLAIM 6.** A method in accordance with claim 5, wherein:

said predetermined configuration features comprise predetermined design features.

### **CLAIM 7.** A method in accordance with claim 6, wherein:

said predetermined design features are selected from a group comprising a right anterior corner, a left anterior corner, a right posterior corner, a left posterior corner, a fractional posterior cap, a fractional anterior cap and a lengthwise strut across top of band.

# **CLAIM 8.** A method in accordance with claim 1, wherein:

said cranial remodeling device information comprises a style information selected from a group comprising a right side opening cranial remodeling band, a wide right side opening cranial remodeling band, a left side opening cranial remodeling band, and a wide left side opening cranial remodeling band.

### **CLAIM 9.** A method in accordance with claim 1, comprising:

utilizing said first data to automatically produce a physical model; and utilizing said physical model and said cranial remodeling device information to produce said cranial remodeling device.

**CLAIM 10.** A method for producing cranial remodeling devices to correct for cranial shape abnormalities comprising:

capturing a three dimensional, substantially global digital image of a deformed head to produce first digital data; and

utilizing one or more neural networks operating on said first digital data to automatically provide cranial remodeling device information for use in fabricating a cranial remodeling device for said deformed head.

## **CLAIM 11.** A method in accordance with claim 10, wherein:

said cranial remodeling device information comprises identification of one of a plurality of types of cranial remodeling devices.

## **CLAIM 12.** A method in accordance with claim 11, wherein:

said plurality of types of cranial remodeling devices includes devices for treatment of specific types of cranial deformities.

### **CLAIM 13** A method in accordance with claim 12, wherein:

said specific types of cranial deformities comprise one or more of plagiocephaly, brachycephaly, and scaphocephaly.

## CLAIM 14. A method in accordance with claim 12, wherein:

said cranial remodeling device information comprises predetermined design features to be incorporated in said cranial remodeling device.

#### **CLAIM 15.** A method in accordance with claim 14, wherein:

said predetermined design features comprise standardized structural configurations.

### **CLAIM 16.** A method in accordance with claim 15, wherein:

said standardized structural configurations are selected from a group comprising a right anterior corner, a left anterior corner, a right posterior corner, a left posterior corner, a fractional anterior cap, a fractional posterior cap, and a lengthwise strut across top of band.

#### **CLAIM 17.** A method in accordance with claim 10, wherein:

said cranial remodeling device information comprises a device style selected from a group comprising a right side opening cranial remodeling band, a wide right side opening cranial remodeling band, a left side opening cranial remodeling band, and a wide left side opening cranial remodeling band.

### **CLAIM 18.** A method in accordance with claim 10, comprising:

utilizing said first data to automatically produce a physical model of a modified head shape; and

utilizing said physical model of said head and said cranial remodeling device

information to produce said cranial remodeling device.

**CLAIM 19.** A method for producing a cranial remodeling device to correct for a cranial shape abnormality, comprising:

capturing a digital image of a deformed head to produce first digital data;

automatically processing said first digital data to produce second data corresponding to a desired shape for use in forming a cranial remodeling device; and

automatically providing cranial remodeling device information for use in fabricating a cranial remodeling device for said deformed head.

## **CLAIM 20.** A method in accordance with claim 19, wherein:

said cranial remodeling device information comprises identification of one of a plurality of types of cranial remodeling devices.

# **CLAIM 21.** A method in accordance with claim 20, wherein:

said plurality of types of cranial remodeling devices includes devices for treatment of specific types of cranial deformities.

### **CLAIM 22.** A method in accordance with claim 21, wherein:

said specific types of cranial deformities comprise one or more of plagiocephaly, brachycephaly, and scaphocephaly.

## **CLAIM 23.** A method in accordance with claim 21, wherein:

said cranial remodeling device information comprises predetermined design features that are selectable for inclusion in said cranial remodeling device.

## **CLAIM 24.** A method in accordance with claim 23, wherein:

said predetermined design features comprise standardized structural configurations.

### **CLAIM 25.** A method in accordance with claim 24, wherein:

said standardized structural configurations are selected from a group comprising two or more of a right anterior corner, a left anterior corner, a right posterior corner, a left posterior corner, a fractional anterior cap, a fractional posterior cap, and a lengthwise strut across top of band.

### **CLAIM 26.** A method in accordance with claim 19, wherein:

said cranial remodeling device information is automatically selected from a group comprising a right side opening cranial remodeling band, a wide right side opening cranial remodeling band, a left side opening cranial remodeling band, and a wide left side opening cranial remodeling band.

### **CLAIM 27.** A method in accordance with claim 19, comprising:

utilizing said second data to automatically produce a physical model of said desired shape; and

utilizing said physical model and said cranial remodeling device information to produce said cranial remodeling device.

# **CLAIM 28.** A method in accordance with claim 19, comprising:

utilizing said second data to automatically produce said cranial remodeling device.

**CLAIM 29.** A system for producing cranial remodeling devices to correct for cranial shape abnormalities comprising:

a digitizer operable to capture three dimensional digital image data of a deformed head to produce first digital data;

a computer;

computer programs operable on said computer such that said computer processes said first digital data to automatically provide cranial remodeling device information for use in fabricating a cranial remodeling device for said deformed head.

#### **CLAIM 30.** A system in accordance with claim 29, wherein:

said cranial remodeling device information comprises identification of one of a plurality of types of cranial remodeling devices.

### **CLAIM 31.** A system in accordance with claim 30, wherein:

said plurality of types of cranial remodeling devices includes devices for treatment of specific types of cranial deformities.

## **CLAIM 32.** A system in accordance with claim 31, wherein:

said specific types of cranial deformities comprise one or more of plagiocephaly, brachycephaly, and scaphocephaly.

## **CLAIM 33.** A system in accordance with claim 31, wherein:

said cranial remodeling device information comprises predetermined design features that may be incorporated in said cranial remodeling device.

### **CLAIM 34.** A system in accordance with claim 33, wherein:

said predetermined design features comprise standardized structural configurations.

### **CLAIM 35.** A system in accordance with claim 34, wherein:

said standardized structural configurations are selected from a group comprising one or more of a right anterior corner, a left anterior corner, a right posterior corner, a left posterior corner, a fractional anterior cap, a fractional posterior cap, and a lengthwise strut across top of band.

#### **CLAIM 36.** A system in accordance with claim 34, wherein:

said cranial remodeling device information comprises a selection from a group comprising one or more of a right side opening cranial remodeling band, a wide right side opening cranial remodeling band, a left side opening cranial remodeling band, and a wide left side opening cranial remodeling band.

## **CLAIM 37.** A system in accordance with claim 29, comprising:

said computer utilizing said first data to automatically produce a physical model from which said cranial remodeling device is produced.

**CLAIM 38.** A system for producing cranial remodeling devices to correct for cranial shape abnormalities comprising:

a digitizer operable to capture a digital image of a head to produce first digital data; and

a computer;

one or more neural networks operable on said computer and responsive to said first digital data to automatically provide cranial remodeling device information for use in fabricating a cranial remodeling device for said head.

#### **CLAIM 39.** A system in accordance with claim 38, wherein:

said cranial remodeling device information comprises identification of one of a plurality of types of cranial remodeling devices.

## **CLAIM 40.** A system in accordance with claim 39, wherein:

said plurality of types of cranial remodeling devices includes devices for treatment of specific predetermined types of cranial deformities.

## **CLAIM 41** A system in accordance with claim 40, wherein:

said specific types of cranial deformities comprise one or more of plagiocephaly, brachycephaly, and scaphocephaly.

## CLAIM 42. A system in accordance with claim 40, wherein:

said cranial remodeling device information comprises predetermined design features that may be incorporated in said cranial remodeling device.

### **CLAIM 43.** A system in accordance with claim 42, wherein:

said predetermined design features comprise structural configurations.

## **CLAIM 44.** A system in accordance with claim 43, wherein:

said structural configurations are selected from a group comprising one or more of a right anterior corner, a left anterior corner, a right posterior corner, a left posterior corner, a fractional anterior cap, a fractional posterior cap, and a lengthwise strut across top of band.

#### **CLAIM 45.** A system in accordance with claim 38, wherein:

said cranial remodeling device information includes selection of a cranial remodeling device style selected from a group comprising a right side opening cranial remodeling band, a wide right side opening cranial remodeling band, and a wide left side opening cranial remodeling band.

**CLAIM 46.** A system in accordance with claim 38 comprising:

said system comprises apparatus utilizing said first data to automatically produce a physical model from which said cranial remodeling device is fabricated.

**CLAIM 47.** A system for producing cranial remodeling devices to correct for cranial shape abnormalities comprising:

a digitizer operable to capture a three dimensional digital image of a deformed head to produce first digital data;

a computer operable to automatically process said first digital data to produce second data corresponding to a desired shape for use in forming a cranial remodeling device; and

said computer automatically providing cranial remodeling device information for use in fabricating a cranial remodeling device for said deformed head.

**CLAIM 48.** A system in accordance with claim 47, wherein:

said configuration information comprises identification of one of a plurality of styles of cranial remodeling devices.

**CLAIM 49.** A system in accordance with claim 48, wherein:

said plurality of styles of cranial remodeling devices includes devices for treatment of specific types of cranial deformities.

**CLAIM 50.** A system in accordance with claim 49, wherein:

said specific types of cranial deformities comprise one or more of plagiocephaly, brachycephaly, and scaphocephaly.

**CLAIM 51.** A system in accordance with claim 49, wherein:

said cranial remodeling device information comprises predetermined design features that may be incorporated in said cranial remodeling device.

**CLAIM 52.** A system in accordance with claim 51, wherein:

said predetermined design features comprise structural configurations.

**CLAIM 53.** A system in accordance with claim 52, wherein:

said structural configurations are selected from a group comprising one or more of a right anterior corner, a left anterior corner, a right posterior corner, a left posterior corner, a fractional anterior cap, a fractional posterior cap, and a lengthwise strut across top of band.

**CLAIM 54.** A system in accordance with claim 47, wherein:

said cranial remodeling device information comprises a device type selection selected form a group comprising a right side opening cranial remodeling band, a wide right side opening cranial remodeling band, a left side opening cranial remodeling band, and a wide left side opening cranial remodeling band.

**CLAIM 55.** A system in accordance with claim 47, wherein:

said computer is operable to utilize said second data to automatically produce a physical model of said desired shape.